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# FLORA OF EMMET COUNTY, IOWA.....

A LIST OF THE NATIVE  
and INTRODUCED PLANTS

By R. I. Cratty

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## FLORA OF EMMET COUNTY, IOWA.

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BY R. I. CRATTY.

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Emmet county lies in the northwestern part of the state, bordering on Minnesota, and has an area of 408 square miles. Its surface waters mostly find an outlet in the east and west forks of the Des Moines river, both of which flow through the county in a southeasterly direction. A small part of the northeastern township, near Iowa Lake, lies in the drainage area of the Minnesota river, and its flora, therefore, is represented in Prof. MacMillan's admirable volume, *The Metaspermæ of the Minnesota Valley*.

This county lies entirely within the area of the Wisconsin drift and the retreating ice fields of our last glacial period left within its borders many shallow depressions, the deeper of which have become permanent lakes; while the more shallow, which undoubtedly were once lakes and ponds, have been gradually filled by the erosive agency of wind and water, aided by the decaying vegetation of mosses and other aquatic plants, until at last the water-loving sedges and grasses gradually narrowed the shore line, till in most cases the whole was converted into a quaking bog; a few of which have an area of several hundred acres, while there are a great many of less size.

The greater part of the county has a gently rolling surface, there being no very high hills. The valleys of both branches of the Des Moines river are much below the level of the surrounding country, and show the effect of extensive erosion. In the eastern part of Iowa Lake and

Armstrong Grove townships, and occasionally elsewhere in the northern half of the county, are low ranges of morainic hills, which tend somewhat to relieve the otherwise monotonous landscape.

Drainage and cultivation are rapidly changing the marshes and, in some cases, even the lakes, into pastures and cultivable fields; and, therefore, the area once occupied by a hydrophytic vegetation is being greatly diminished.

There are comparatively few xerophytic plants in the county, and these usually occupy favorable localities along the river bluffs, or on the sterile, morainic hills. The flora of the woods and prairies resembles more closely that of the adjacent territory to the east and north; only a few typical western plants coming within our borders.

There are no rock exposures within our limits, and therefore the soil is unsuited for many of the ferns and other plants common to rocky woods. The forest area is small, being confined to the banks of the lakes and streams, but since the prairie fires have ceased, the wooded area shows a tendency to increase.

So large a proportion of the county consists of cultivable or pasture land, that very many of the indigenous species of plants must eventually become extinct within our area. Some few, already, can no longer be found, and it is with the view of recording the original flora, that this paper is prepared, as the author resided many years in the county when nine-tenths of its surface was covered by the virgin forest and prairie vegetation.

Compared with the area, the number of plants listed is small, only 590, including those introduced; but this may be accounted for, partly at least, by the slight diversity in surface and soil, and by the fact that it lies near the headwaters of its drainage streams, and is thus less favored by nature for seed distribution by natural agencies.

The climate of the county, like that of all portions of the northern Mississippi valley, is subject to great variation in temperature, the annual variation occasionally being as much as 140 degrees, the yearly mean being about 45 degrees. The annual precipitation, according to rather

fragmentary data is about 25 inches, and is usually so distributed as to be sufficient for agricultural operations, though in some seasons vegetation suffers from hot, south-west winds.

The synonymy adopted in the following catalogue is that of the *Illustrated Flora*, with such emendations as more recent publications make necessary. The names used in *Gray's Manual*, sixth edition, and the *Illustrated Flora* when different from those adopted in this list, are printed in parentheses.

The author takes pleasure in acknowledging valuable assistance in studying our native flora from numerous specialists in this and other states. Among those in our own state, whose aid has been freely given, are Prof. Thos. H. Macbride and Prof. B. Shimek of the Iowa State University; Prof. L. H. Pammel of the Iowa State College at Ames, and Prof. T. J. Fitzpatrick of Estherville, all of whom have published valuable papers treating different phases of the Iowa flora.

## PTERIDOPHYTA.

### POLYPODIACEÆ.

#### ONOCLEA L.

1. *O. sensibilis* L. Sensitive Fern. Rare in woods, Estherville; also introduced in an artificial grove in Armstrong Grove township.
2. *O. struthiopteris* (L.) Hoff. Ostrich Fern. Infrequent, Estherville and Armstrong Grove townships.

#### CYSTOPTERIS Bernh.

3. *C. fragilis* (L.) Bernh. Rare in woods throughout.

#### ASPLENIUM L.

4. *A. filix-femina* (L.) Bernh. Lady Fern. Woods, and occasionally in artificial groves; our most common species.

#### ADIANTUM L.

5. *A. pedatum* L. Maiden-hair Fern. Woods along West Fork of the Des Moines.



## EQUISETACEÆ.

EQUISETUM L. Horse-tail, Scouring Rush.

6. *E. arvense* L. Very common in low ground.
7. *E. fluviatilis* L. (*E. limosum* L.) common in marshes; frequently much branched, especially the sterile stems,
8. *E. hyemale* L. Rare on dry banks.
9. *E. laevigatum*, A. Braun. Frequent on dry prairies.

## SPERMATOPHYTA.

## PINACEÆ.

JUNIPERUS L.

10. *J. virginiana* L. Red Cedar. High banks of lakes; becoming rare; our only native evergreen.

## TYPHACEÆ.

TYPHA L.

11. *T. latifolia* L. Cat-tail Rush. Common throughout in marshes.

SPARGANIUM L.

12. *S. eurycarpum* Engelm Bur-reed. Frequent in marshes and along shores of ponds.
13. *S. simplex* Huds. Rare in marshes near Armstrong.

## NAIADACEÆ.

POTAMOGETON L. Pond-weed.

14. *P. natans* L. West fork of the Des Moines river at Estherville. Also Spirit Lake, Dickenson county.
15. *P. amplifolius* Tuck. West Fork of Des Moines.
16. *P. lonchites* Tuck. Common, streams and lakes.
17. *P. heterophyllus* Schreb. Common in marshes throughout; a beautiful species.
18. *P. illinoense* Morong. Lake east of Armstrong, the station destroyed by the drying up of the lake. Part of the type material was from this locality.
19. *P. praelongus* Wulf. Rare; Iowa Lake.

20. *P. perfoliatus richardsonii* A. Bennett. (*P. perfoliatus lanceolatus* Robbins.) Common in lakes and quite variable; a most beautiful species.
21. *P. zosteræfolius* Schum. Iowa Lake.
22. *P. foliosus* Raf. (*P. pauciflorus* Pursh.) Common in lakes and slow streams.
23. *P. foliosus niagarensis* (Tuck.) Morong. Swift running water below mill-dam, Estherville, Aug. 7, 1897.
24. *P. friesii* Ruprecht. (*P. major* (Fries) Morong.) Iowa Lake, and probably in other lakes throughout the region.
25. *P. pectinatus* L. Very common in lakes throughout this and adjoining counties.

## NAIAS L.

26. *N. flexilis* (Willd.) Rost & Schmidt. Common in shallow water in lakes.

## SCHEUCHZERIACEÆ.

## TRIGLOCHIN L.

27. *T. maritimum* L. Rare in marshes. Ours is the var *elatum* of Gray's Manual..

## SCHEUCHZERIA L.

28. *S. palustris* L. Very rare; bog three miles northwest of Armstrong; the only known locality in the state.

## ALISMACEÆ.

## ALISMA L. Water-plantain.

29. *A. plantago-aquatica* L. Very common in low ground.

## SAGITTARIA L. Arrow-head.

30. *S. latifolia* Willd. (*S. variabilis* Engelm.) Frequent throughout but much less common than the next.
31. *S. arifolia* Nutt. Very common in bogs and low places. This and the preceding species present great variation in leaf forms.

32. *S. cristata* Engelm. The type of this rare species was discovered in 1881, in a small lake, east of Armstrong. The station has since been destroyed but the plant occurs in several localities in Minnesota.

## VALLISNERIACEÆ.

PHILOTRIA Raf. Ditch-moss.

33. *P. canadensis* (Michx.) Britton. Rare in rivers and lakes.

VALLISNERIA L. Eel-grass.

34. *A. spiralis* L. Rather frequent in lakes, but rarely seen in flower.

## POACEÆ.

ANDROPOGON L. Beard-grass.

35. *A. scoparius*. Michx. Common on rather dry prairies.
36. *A. furcatus* Muhl. (*A. provincialis* Gray's Man.) Crow-foot grass; very common; a valuable species for hay and pastures, but like most of our native grasses, quickly destroyed by close grazing.

SORGHASTRUM Nash.

37. *S. avenaceum* (Michx.) Nash. (*Chrysopogon avenaceus* Michx.) Benth. (*Sorghum nutans* Gray). Common on prairies with the preceding species.

SYNTHESISMA Walt.

38. *S. sanguinale* (L.) Nash. (*Panicum sanguinale* L.) A worthless European species introduced in cultivated and waste ground.
39. *S. linearis* (Krock.) Nash. (*Panicum glabrum* Gmelin.) Common; banks of lakes and streams.

ECHINOCHLOA Beauv. Barn-yard Grass.

40. *E. crus-galli* (L.) Beauv. (*Panicum crus-galli* L.) Introduced in cultivated and waste places.

## PANICUM L.

41. *P. scribnerianum* Nash. (*Panicum paniciflorum* A. Gray.) Dry prairies and knolls; common.
42. *P. dichotomum* L. Dry knolls; a hirsute form; infrequent.
43. *P. depauperatum* Muhl. Dry ground, woods and prairies; rare.
44. *P. virgatum* L. Very common.
45. *P. capillare* L. Very common, as well as useless.

## CHÆTOCHLOA. Scribner. Fox-tail grass.

46. *C. glauca* (L.) Scribner. (*Ixophorus glaucus* (L.) Nash. *Setaria glauca* Beauv.) A very troublesome weed, introduced in cultivated fields.
47. *C. viridis* (L.) Scribner. (*Ixophorus viridis* (L.) Nash. *Setaria viridis* Beauv.) Introduced like the preceding, but less common.

## ZIZANIA L. Wild Rice.

48. *Z. aquatica* L. Common in marshes. The seeds of this annual grass during very dry seasons will lie dormant, only germinating when the proper conditions of moisture exist.

## HOMALOCENCHRUS Mieg.

49. *H. virginicus* (Willd.) Britton. (*Leerzia virginica* Willd.) Low places in woods; common.
50. *H. oryzoides* (L.) Poll. (*Leerzia oryzoides* Sav.) Common in marshes, and along streams.

## PHALARIS L.

51. *P. arundinacea* L. Rare, near Armstrong.

## SAVASTANA Schrank. Sweet vernal Grass.

52. *S. odorata* (L.) Scribner. (*Hierochloa borealis* R. and S.) Our earliest flowering grass; common in low ground, and quite difficult to subdue.

## STIPA L.

53. *S. spartea* Trin. Porcupine Grass. Common in high prairies.

## ORYZOPSIS Michx.

54. *O. melanocarpa* Muhl. Frequent in woods.

**MUHLENBERGIA** Schreb.

55. *M. mexicana* (L.) Trin. Common, woods and prairies.
56. *M. racemosa* (Michx.) B. S. P. (*Muhlenbergia glomerata* Trin.) Common and quite difficult to subdue in low ground.

**PHLEUM** L. Timothy.

57. *P. pratense* L. Escaped from cultivation.

**ALOPECURUS** L. Marsh Fox-tail.

58. *A. fulvus* Smith. Rare in marshes; the common eastern species, *A. geniculatus* L. has not been detected within our limits.

**SPOROBOLUS** R. Brown. Rush-grass.

59. *S. neglectus* Nash. Very common in pastures; where it is utterly worthless, never being eaten by cattle.
60. *S. cuspidatus* (Torr.) Wood. A slender species, quite common on dry knolls.
61. *S. cryptandrus* (Torr.) A. Gray. Rare, east bank of Iowa lake, and bank of Des Moines at Estherville.
62. *S. heterolepis* A. Gray. A valuable bunch grass, common on high prairies; called wire-grass by haymakers, because the wirey culms when mature are difficult to cut with the mower.

**CINNA** L. Wood Reed-grass.

63. *C. arundinacea* L. Low ground in woods; Iowa Lake.

**AGROSTIS** L.

64. *A. alba* L. (*A. vulgaris* With.) Red-top. Naturalized from Europe.
65. *A. hyemalis* (Walt.) B. S. P. (*Agrostis scabra* Willd.) Hair-grass. Common on low prairies.

**CALAMAGROSTIS** Adans.

66. *C. canadensis* (Michx.) Beauv. Common, and very variable.
67. *C. confinis* (Willd.) Nutt. Common on low prairies.



## CALAMOVILFA Hack.

68. *C longifolia* (Hook.) Hack. (*Calamagrostis longifolia* Hook). Rare in dry ground; just south of state line on road to Iowa Lake from the south.

## SPARTINA Schreb. Tall Slough-grass.

69. *S cynosuroides* (L.) Willd. Very common on low prairies, and one of our most valuable native grasses. The long white rhizomes are very numerous, and are difficult to cut with the plow.

## BOUTELOUA Lag. Grama-grass.

70. *B oligostachya* (Nutt.) Torr. Rare; dry ground near Estherville.

## ATHEROPOGON Muhl.

71. *A curtispindula* (Michx.) Fourn. (*Bouteloua curtispindula* Torr). Common on upland prairies.

## PHRAGMITES Trin. Reed.

72. *P. phragmites* (L) Karst. (*P. communis* Trin). Our tallest species of grass, everywhere common in marshes.

## ERAGROSTIS Beauv.

73. *E. frankii* Steud. Local; north shore of Iowa Lake.  
 74. *E. purshii* Schrad. Infrequent; shores of lakes and along roadsides where the seeds have probably been carried by the wheels of vehicles.  
 75. *E. major* Host. (*E. poæoides* var *megastachya* A. Gray.) Introduced in cultivated ground.  
 76. *E. hypnoides* (Lam.) B. S. P. (*E. reptans* Nees.) Common on river banks.

## EATONIA Raf.

77. *E obtusata* (Michx.) A. Gray. Common on dry prairies.  
 78. *E. pennsylvanica* (D. C.) A. Gray. Common in low ground and marshes.  
 79. *E. pennsylvanica major* Torr. Infrequent in low places.

## KOELERIA Pers.

80. *K. cristata* (L.) Pers. Very common on high prairies.

## POA L.

81. *P. compressa* L. Infrequent, woods and prairies.
82. *P. pratensis* L. Kentucky Blue-grass. Everywhere along roadside, but not native to this region.
83. *P. flava* L. (*P. serotina* Ehrh.) Frequent, woods and prairies.
84. *P. sylvestris* A. Gray. Frequent in woods.

## SCOLOCHLOA Link.

85. *S. festucacea*. (Willd.) Link. *Grapphephorum festucaceum* A. Gray. Frequent in marshes. This is the southern limit of the species in the United States so far as known.

## PANIOLARIA Fabr.

86. *P. nervata*. (Willd.) Kuntze. (*Glyceria nervata* Trin.) Low woods and prairies; common.
87. *P. americana*. (Torr.) Mac M. (*Glyceria grandis* Watson.) A robust species common in marshes.
88. *P. fluitans* L. Kuntze. (*Glyceria fluitans* L.) Common in marshes.

## FESTUCA L.

89. *F. nutans* (Willd.) Low woods, Estherville and Iowa Lake.

## BROMUS L.

90. *B. ciliatus* L. Common in woods and very variable.
91. *B. secalinus* L. Chess, Cheat. Becoming quite common; introduced from Europe into wheatfields.

## AGROPYRON J. Gaertn.

92. *A. occidentale* Scribner. (*Agropyrum spicatum* Scrib. & Smith.) Common on dry prairies; a very good pasture grass.
93. *A. tenerum* Vasey. Woods and prairies; common.
94. *A. caninum* (L) R. and S. (*Agropyrum unilaterale* Vasey.) Rare on dry prairies.

## HORDEUM L.

95. *H. jubatum* L. Wild Barley. A troublesome weed, everywhere common.

## ELYMUS L. Wild Rye.

96. *E. striatus* Willd. Frequent in woods.  
 97. *E. virginicus* L. Frequent in woods, and on river banks.  
 98. *E. canadensis* L. Common, and extremely variable.

## HYSTRIX Mœnch.

99. *H. hystrix* (L.) Millsp. (*Elymus hystrix* L.) Common in woods.

## CYPERACEÆ.

## CYPERUS L.

100. *C. rivularis* Kunth. (*C. diandrus* var *castaneus* Torr.) Very common and variable; banks of lakes and rivers.  
 101. *C. inflexus* Muhl. (*C. aristatus* Bœckl.) Common; banks of lakes and streams.  
 102. *C. schweinitzii* Torr. North shore of Swan Lake; also at Spirit Lake, Dickinson county.  
 103. *C. erythrorhizos* Muhl. Banks of lakes and streams; our handsomest species.  
 104. *C. speciosa* Vahl. Banks of lakes and streams, and in marshes; very variable.  
 105. *C. strigosus* L. Less common than the preceding and in similar situations; variable.  
 106. *C. strigosus capitatus* Bœckl. Very distinct in appearance, but undoubtedly merely a state produced by very dry weather. Rare; slough one mile northeast of Armstrong.

## ELEOCHARIS R. Brown.

107. *E. palustris* (L.) R. & S. Common in marshes and variable.  
 108. *E. palustris glaucescens* (Willd.) Gray. Very common in low ground.  
 109. *E. acicularis* (L.) R. & S. Everywhere in low marshy places.  
 110. *E. wolfii* Gray. Rare; low prairies near Armstrong.

## SCIRPUS L.

- 111. *S. lacustris* L. (*S. validus* Vahl.) Great Bulrush. Very common in marshes, shallow lakes and along streams.
- 112. *S. fluviatilis* (Torr.) A. Gray. Frequent in marshes; our largest fruited species.
- 113. *S. atrovirens* Muhl. Low prairies, common.

## ERIOPHORUM L. Cotton-grass.

- 114. *E. polystachyon* L. Marshes and low prairies.
- 115. *E. gracile* Koch. Rare in marshes. Our plant is the form called var. *paucinervium* by Engelman.

## CAREX L. Sedge.

- 116. *C. lupulina* Muhl. Low ground, Iowa Lake; rare.
- 117. *C. monile* Tuck. Rare in low ground, Armstrong.
- 118. *C. retrorsa* Schwein. Rare in woods; Estherville and Iowa Lake.
- 119. *C. hystericina* L. Infrequent; Estherville and Spirit Lake.
- 120. *C. comosa* Boott. Marshes; Armstrong.
- 121. *C. trichocarpa* Muhl. Ravines west of Estherville.
- 122. *C. aristata* R. Br. Rare; marsh one mile east of Armstrong.
- 123. *C. riparia* W. Curtis. Frequent in marshes.
- 124. *C. lanuginosa* Michx. (*C. filiformis* var. *latifolia* Boeckl.) Frequent in low ground.
- 125. *C. filiformis* L. Common in bogs; one of the principal plants which help to form the tough, floating sod in the quaking marshes.
- 126. *C. fusca* All. (*C. buxbaumii* Ten.) Rare; in swamps near Armstrong.
- 127. *C. stricta angustata* (Boott.) Bailey. Infrequent; shores of streams and lakes and occasionally in marshes; variable.
- 128. *C. limosa* L. Rare; in marshes in Armstrong Grove township.
- 129. *C. longirostris* Torr. Common in woods. A very distinct species.

130. *C. amphibola* Steud. (*C. grisea* var. *angustifolia* Boott.) Rare; woods west of Estherville.
131. *C. crawei* Dewey. A pretty little plant, but very rare in Iowa; N. E. corner, sec. 11, T. 99 N., R. 31 W., one and one-half miles northeast of Armstrong.
132. *C. grisea* Wahl. Rare in woods, south shore of Iowa lake.
133. *C. meadii* Dewey. Very common on low prairies.
134. *C. laxiflora blanda* (Dew.) Boott. Frequent in woods.
135. *C. setifolia* (Dew.) Britton. (*C. eburnea* Boott.) Rare; dry hillsides in woods.
136. *C. pennsylvanica* Lam. Very common on upland prairies. Our earliest sedge.
137. *C. chordorhiza* L. f. Bog two and one-half miles north of Armstrong. A common high northern species barely coming within our limits. The only known station in the state.
138. *C. stenophylla* Wahl. Rare; dry ground; school-house block, Estherville. The station since destroyed. The only other known locality in the state is in Lyon county (Prof. Shimek.)
139. *C. stipata* Muhl. Common near water in low woods.
140. *C. teretiuscula* Gooden. Frequent in marshes.
140. *C. teretiuscula prairea* Dewey. Bogs; more common than the species.
141. *C. gravior* Bailey. Very common in woods, and occasionally on open prairies.
142. *C. vulpinoidea* Michx. Very common in low ground.
143. *C. sartwellii* Dewey. Infrequent on low prairies. Usually dioecious.
144. *C. rosea* Schkuhr. Frequent, woods and prairies.
145. *C. rosea radiata* Dewey. Rare in dry woods.
146. *C. interior* Bailey. Woods and prairies. Usually growing in dense tufts.
147. *C. tribuloides bebbii* (Olney Baily.) Infrequent in marshes.



148. *C. cristatella* Britton. (*C. cristata*) Schwein.  
Frequent in low woods.
149. *C. straminea* Willd. Rare in woods.
150. *C. festucea* Willd. (*C. straminea brevior* Dewey.)  
Common, and extremely variable.
151. *C. bicknellii* Britton. (*C. straminea* var. *crawei*  
Boott.) Common on upland prairies.
152. *C. sychnocephala* Carey. Rare in a marsh east of  
Armstrong; also at Spirit Lake. A plant very  
different in appearance from any other Ameri-  
can species of the genus.

## ARACEÆ.

## ARISÆMA Mart.

153. *A. triphyllum* (L.) Torr. Jack-in-the-pulpit;  
Indian Turnip. Frequent in rich woods.

## ACORUS L.

154. *A. calamus* L. Sweet-flag; calamus-root. Infrequent  
in marshes.

## LEMNACEÆ.

## SPIRODELA Schleid.

155. *S. polyrhiza* (L.) Schleid. (*Lemna polyrhiza* L.)  
Very common, floating on stagnant water,  
especially in bayous along streams.

## LEMNA L.

156. *L. trisulca* L. Ponds and marshes; frequent.

## COMMELINACEÆ.

## TRADESCANTIA L.

157. *T. virginiana* L. Spiderwort. Open woods and  
prairies; common.

## PONTEDERIACEÆ.

## HETERANTHERA R. &amp; P.

158. *H. dubia* (Jacq.) Mac M. (*Schollera graminea* A.  
Gray.) Infrequent; shores of lakes.

## JUNCACEÆ.

## JUNCUS L. Rush.

- 159. *J. balticus* Deth. Very rare; saline soil; Armstrong.
- 160. *J. tenuis* Willd. Very common on low prairies.
- 161. *J. nodosus* L. Infrequent; in low places.
- 162. *J. torreyi* Coville. (*J. nodosus* var. *megacephalus* Torr.) Frequent in low ground.

## JUNCOIDES Adans.

- 163. *J. campestre* (L) Kuntze. (*Luzula campestre* D C.) Rare, woods west of Estherville.

## MELANTHACEÆ.

## ZYGADENUS Michx.

- 164. *Z. elegans* Pursh. (*Z. glaucus* Nutt.) Very common on prairies.

## UVULARIA L. Bellwort.

- 165. *U. grandiflora* J. E. Smith. Frequent in rich woods.

## LILIACEÆ.

## ALLIUM L. Wild Onion. Leek.

- 166. *A. tricoccum* Ait. Rare, woods near Estherville.
- 167. *A. cernuum* Roth. Common on prairies.
- 168. *A. canadense* Kahn. Frequent on low prairies.

## LILIUM L.

- 169. *L. philadelphicum* L. Red Lily. Common on prairies.
- 170. *L. superbum* L. Turk's-cap Lily. Rare near Estherville (James Espeset).

## ERYTHRONIUM L.

- 171. *E. albidum* Nutt. White Adder's-tongue. Frequent in woods.

## CONVALLARIACEÆ.

## ASPARAGUS L.

- 172. *A. officinalis* L. Asparagus. A common species escaped from cultivation.

## VAGNERA Adans.

173. *V. racemosa* (L.) Morong. (*Smilacina racemosa* Desf.) Common in the woods.  
 174. *V. stellata* (L.) Morong. (*Smilacina stellata* Desf.) Common in woods.

## POLYGONATUM Adans.

175. *P. commutatum* (R. & S.) Diet. (*P. giganteum* Diet.) Frequent in low woods.

## TRILLIUM L. Wake-robin.

176. *T. nivale* Riddell. Very rare in the woods north of Estherville.  
 177. *T. erectum* L. Rare in woods; Iowa Lake, and Armstrong Grove. Our form always has declined flowers.

## SMILACEÆ.

## SMILAX L. Smilax; Green-brier.

178. *S. herbacea* L. Common in woods.  
 179. *S. hispida* Muhl. Frequent in woods.

## AMARYLLIDACEÆ.

## HYPOXIS L. Star-grass.

180. *H. hirsuta* (L.) Coville. (*H. erecta* L.) Very common on low prairies.

## IRIDACEÆ.

## IRIS L. Blue Flag.

181. *I. versicolor* L. Common in low ground and marshes.

## SISYRINCHIUM L. Blue-eyed Grass.

182. *S. angustifolium* Mill. Very common on low prairies.

## ORCHIDACEÆ.

## CYPRIPEDIUM L.

183. *C. candidum* Willd. Small White Lady-slipper. Frequent on low prairies.

184. *C. hirsutum* Mill. (*C. pubescens* Willd.) Large Yellow Lady-slipper. Rare in woods west of Estherville.

**HABENARIA** Willd. Rein Orchis.

185. *H. leucophæa* (Nutt.) A. Gray. Frequent on low prairies.

**GYROSTACHYS** Pers.

186. *G. cernua* (L.) Kuntze. (*Spiranthes cernua* L. C. Richards.) Very rare on low prairies.

**LEPTORCHIS** Thouars.

187. *L. læselii* (L.) Mac M. (*Liparis læselii* L. C. Richards.) Very rare; artificial grove, one and one-half miles northeast of Armstrong, where it was probably introduced by the birds. It is not known from any other locality in the state.

**JUGLANDACEÆ.**

**JUGLANS** L.

188. *J. nigra* L. Black Walnut. This valuable tree once quite common along streams, is becoming rare.

**HICORIA** Raf.

189. *H. minima* (Marsh.) Britton. (*Carya amara* Nutt.) Bitter-nut. Frequent in woods; our only hickory.

**SALICACEÆ.**

**POPULUS** L.

190. *P. alba* L. White or Silver-leaf Poplar. Escaped from cultivation; the tree, although a handsome one, can not be recommended, as it spreads badly by the roots.
191. *P. tremuloides* Michx. American Aspen. Infrequent in woods; rarely in clumps on the prairie.
192. *P. deltoides* Marsh. (*P. monilifera* Ait.) Cottonwood. Rare in the native state in several localities in the county, but becoming very common in cultivation and as an escape in low ground.

## SALIX L.

193. *S. nigra* Marsh. Black Willow. Frequent along streams.
194. *S. amygdaloides* Anders. Peach-leaved Willow. Common throughout, near lakes and streams.
195. *S. alba vitellina* (L.) Koch. White Willow. This European form is commonly cultivated throughout this region, and is frequent as an escape.
196. *S. fluviatilis* Nutt. (*S. longifolia* Muhl.) Sandbar Willow. One of our most common species.
197. *S. humilis* Marsh. A pretty little shrub, rare in the border of woods, and on the prairies.
198. *S. discolor* Marsh. Pussy Willow. A pretty shrub, or low tree; frequent in low ground.
199. *S. cordata* Muhl. Heart-leaved Willow. Very common along streams, and on low prairies.
200. *S. myrtilloides* L. Bog Willow. This northern species, from one to three feet high, occurs in a bog two miles north of Armstrong, the only locality known in the state.

## BETULACEÆ.

## OSTRYA Scop.

201. *O. virginiana* (Mill.) Willd. Hop Hornbeam, Ironwood. A small tree common in woods.

## CORYLUS L.

202. *C. americana* Walt. Hazel-nut. Frequent on the edges of woods, but much less common than farther east.

## FAGACEÆ.

## QUERCUS L.

203. *Q. rubra* L. Red Oak. Common in the woods in the western part of the county.
204. *Q. macrocarpa* Michx. Bur Oak. Our commonest native tree; a species which exhibits the pioneer spirit, reaching out into the prairies in advance of any other of the hard wood trees.



## ULMACEÆ.

## ULMUS L.

205. *U. americana* L. ~~White or~~ Water Elm. Common along streams; one of our most desirable ~~shade~~ trees.

206. *U. fulva* Michx. Slippery Elm. Frequent.

## CELTIS L.

207. *C. occidentalis* L. Hackberry. Rather rare.

## MORACEÆ.

## CANNABIS L.

208. *C. sativa* L. Hemp. A native of Europe and Asia, escaped from cultivation.

## URTICACEÆ.

## URTICA L.

209. *U. gracilis* Ait. Nettle. Common in woods, and introduced into rich ground near dwellings, where it is a troublesome weed.

## URTICASTRUM Fabr.

210. *U. divaricatum* (L) Kuntze. (*Laportea canadensis* Gaud.) Common in woods.

## ADICEA Raf.

211. *A. pumila* (L.) Raf. (*Pilea pumila* Gray.) Common in low woods.

## PARIETARIA L.

212. *P. pennsylvanica* Muhl. Infrequent, south shore of Iowa Lake.

## SANTALACEÆ.

## COMANDRA Nutt.

213. *C. umbellata* (L.) Nutt. Common on prairies.

## ARISTOLOCHIACEÆ.

## ASARUM L.

214. *A. canadense* L. Wild Ginger. Rare in woods west of Estherville.

## POLYGONACEÆ.

## RUMEX L.

- 215. *R. altissimus* Wood. Peach-leaved Dock. Common in low ground.
- 216. *R. britannica* L. Great Water-Dock. Frequent; borders of ponds, and along streams.
- 217. *R. crispus* L. Curled Dock. An European species, introduced into cultivated fields.
- 218. *R. persicarioides* L. (non *R. maritimus* L.) Common in marshes.

## POLYGONUM L.

- 219. *P. amphibium* L. Ponds and sloughs; frequent, the large leaves floating in the water.
- 220. *P. hartwrightii* A. Gray. Very common in bogs, but rarely seen in flower or fruit.
- 221. *P. emersum* (Michx.) Britton. (*P. muhlenbergii* Watson.) Very common in sloughs and low ground.
- 221. *P. incarnatum* Ell. Common, especially in cultivated ground, or near dwellings.
- 222. *P. pennsylvanicum* L. Everywhere common.
- 223. *P. punctatum* Ell. (*P. acre* H. B. K. non Lam.) Water Smart-weed. Common in low, wet ground.
- 224. *P. aviculare* L. Knot-grass, Door-weed. Everywhere around dwellings.
- 225. *P. erectum* L. Rather rare near dwellings. Neither this nor the preceding species is probably native to our county, though indigenous to North America.
- 226. *P. ramosissimum* Michx. Common.
- 227. *P. convolvulus* L. Black Bind-weed. A troublesome European species, everywhere common in cultivated fields.
- 228. *P. scandens* L. Climbing False Buckwheat. Common in woods, where it climbs high over bushes.

## CHENOPODIACEÆ.

## CHENOPODIUM L.

229. *C. album* L. Lamb's-quarters, Pigweed. A common weed, naturalized from Europe.
230. *C. boscianum* Moq. Goosefoot. Common in woods.
231. *C. hybridum* L. Maple-leaved Goosefoot. Woods, Iowa lake, and probably elsewhere in the country.

## SALSOLA L.

232. *S. tragus* L. (*S. kali*. var. *tragus* Moq.) Russian Thistle. A noxious European weed, very common and troublesome in dry years.

## AMARANTHACEÆ.

## AMARANTHUS L.

233. *A. retroflexus* L. Pig-weed. A very common weed, naturalized from tropical America.
234. *A. blitoides* S. Watson. A common weed around dwellings, naturalized from the western plains.
235. *A. græcizans* L. (*A. albus* L.) Our commonest tumble-weed, introduced from tropical America.

## ACNIDA L.

236. *A. tamariscina* (Nutt.) Wood. Frequent along streams, and in low cultivated ground—occasionally in marshes; on muskrat houses.

## NYCTAGINACEÆ.

## ALLIONIA Loeßl.

237. *A. nyctaginea* Michx. (*Oxybaphus nyctagineus* Sweet.) Frequent on knolls and in cultivated fields.
238. *A. hirsuta* Pursh. (*Oxybaphus hirsutus* Sweet.) Rare; dry ground along road south of Iowa Lake.

## PORTULACACEÆ.

## PORTULACA L.

239. *P. oleracea* L. Purslane. A fleshy weed, very common in cultivated ground, where it has become naturalized from its native home in the southwest, and tropical America.

## CARYOPHYLLACEÆ.

## AGROSTEMMA L.

240. *A. githago* L. (*Lychnis githago* Scop.) Corn Cockle. An European plant, adventive in wheat fields.

## SILENE L.

241. *S. stellata* (L.) Ait. Starry Campion. Common in woods.
242. *S. antirrhina* L. Frequent in woods and waste places.
243. *S. noctiflora* L. Introduced into waste places, Estherville.

## VACCARIA Medic. Cow-herb.

244. *V. vaccaria* (L.) Britton. (*Saponaria vaccaria* L.; *Vaccaria vulgaris* Host.) A common European weed, adventive in wheatfields.

## ALSINE L.

245. *A. longifolia* (Muhl.) Britton. (*Stellaria longifolia* Muhl.) Common in marshes.

## NYMPHÆACEÆ.

## NYMPHÆA L.

246. *N. advena* Soland. (*Nuphar advena* R. Br.) Yellow Pond-lily. Common in lakes and ponds.

## CASTALIA Salisb.

247. *C. tuberosa* (Paine) Greene. (*Nymphæa tuberosa* Paine.) White Pond-lily. Once very common in lakes and ponds, but becoming rare.

## RANUNCULACEÆ.

## CALTHA L.

248. *C. palustris* L. Marsh Marigold. Rare; found only in a marshy spring in the woods north of Estherville.

## ISOPYRUM L.

219. *I. biternatum* (Raf.) Torr. and Gray. Common in woods.

## ACTÆA L. Bane-berry.

250. *A. rubra* (Ait.) Willd. (*A. spicata* var. *rubra* Ait.) Frequent in Woods.

251. *A. alba* (L.) Mill. Frequent in low woods.

## AQUILEGIA L. Columbine.

252. *A. canadensis* L. Common in woods.

## DELPHINIUM L. Wild Lark-spur.

253. *D. carolinianum* Walt. (*D. azureum* Michx.) Common on prairies, especially on gopher knolls.

## ANEMONE L.

254. *A. cylindrica* Gray. Frequent; woods and prairies.

255. *A. virginiana* L. Rare; in woods and thickets.

256. *A. canadensis* L. (*A. pennsylvanica* L.) Anemone. Very common; woods and prairies.

## HEPATICA Scop. Liver-leaf.

257. *H. acuta* (Pursh.) Britton. Frequent in the woods along the West Fork of the Des Moines.

## PULSATILLA Adans. Wind-flower.

258. *P. hirsutissima* (Pursh.) Britton. (*Anemone patens* L. var. *nuttalliana* Gray.) Very common on high prairies.

## CLEMATIS L.

259. *C. virginiana* L. Virgin's Bower. Rare; in woods west of Estherville. (Mrs. J. W. Harrison.)

## RANUNCULUS L. Crowfoot.

260. *R. delphinifolius* Torr. (*R. multifidus* Pursh.) Common in marshes.

261. *R. ovalis* Raf. (*R. rhomboideus* Goldie.) Frequent in earliest spring on dry slopes.

262. *R. abortivus* L. A homely species, very common in woods.

263. *R. sceleratus* L. Frequent near ponds and streams. The plant has an acrid taste.

264. *R. pennsylvanicus* L. Frequent in woods.



265. *R. septentrionalis* Poir. Very common on low prairies; a variable plant.

BATRACHIUM S. F. Gray.

266. *B. divaricatum* (Schränk) Wimm. (*Ranunculus circinatus* Sibth.) Very rare; in a pond along old C. M. & St. P. R. R., Estherville.

OXYGRAPHIS Bunge.

267. *O. cymbalaria* (Pursh) Prantl. (*Ranunculus cymbalaria* Pursh.) Frequent on low prairies.

THALICTRUM L.

268. *T. purpurascens* L. Meadow-rue. Woods and prairies; very common.

BERBERIDACEÆ.

CAULOPHYLLUM Michx.

269. *C. thalictroides* (L.) Michx. Blue Cohosh. Rare; woods west of Estherville.

MENISPERMACEÆ.

MENISPERNUM L.

270. *M. canadense* L. Moonseed. Frequent in woods.

PAPAVERACEÆ.

SANGUINARIA L.

271. *S. canadensis* L. Bloodroot. Common in woods.

BICUCULLA Adans. Dutchman's Breeches.

272. *B. cucullaria* (L.) Millsp. (*Dicentra cucullaria* Torr.) Low woods; common.

CAPNOIDES Adans.

273. *C. micranthum* (Engelm.) Britton. (*Corydalis micrantha* Engelm.) Rare in dry soil; Estherville and Iowa Lake.

CRUCIFERÆ.

LEPIDIUM L. Pepper-grass.

274. *L. virginicum* L. Waste places; less frequent than the next.
275. *L. apetalum* Willd. Very common, fields and roadsides.

## SISYMBRIUM L.

276. *S. officinale* (L.) Scopoli. A common weed, naturalized from Europe.

## BRASSICA L.

277. *B. nigra* (L.) Koch. Black Mustard. Waste places; less common than the next. Introduced from Europe.
278. *B. arvensis* (L.) B. S. P. (*B. sinapistrum* Boiss.) Charlock. Introduced from Europe into grain fields, where it is very common and troublesome.

## RORIPA Scop.

279. *R. palustris* (L.) Bess. (*Nasturtium palustre* D C.) Common in low fields and swamps; the pods variable in shape.
280. *R. armoracia* (L.) A. S. Hitchcock. (*Nasturtium armoracia* Fries.) Horse-radish. An occasional escape from cultivation; a native of Europe.

## CARDAMINE L.

281. *C. parviflora* L. (*C. hirsuta* var. *sylvatica* Gray.) Frequent in woods, Iowa Lake.
282. *C. bulbosa* (Schreb.) B. S. P. (*C. rhomboidea* D C.) Frequent along water courses.

## DENTARIA L.

283. *D. laciniata* Muhl. Pepper-root. Frequent in rich woods.

## BURSA Webber. Shepherds' Purse.

284. *B. bursa-pastoris* (L.) Britton. (*Capsella bursa-pastoris* Medic.) Naturalized from Europe; very common.

## CAMELINA Crantz.

285. *C. sativa* (L.) Crantz. False Flax. Adventive from Europe in flax fields.

## SOPHIA Adans.

286. *S. pinnata* (Walt.) Britton. (*Sisymbrium canescens* Nutt.) Rare on dry prairies.

## ARABIS L.

287. *A. dentata* Torr. & Gray. Rare in woods, Iowa Lake.
288. *A. hirsuta* (L.) Scop. Rare in woods, Estherville.

289. *A. brachycarpa* (Torr. & Gray) Britton. (*A. confinis* S. Watson; *A. drummondii* Gray.) Common in dry woods.

ERYSIMUM L.

290. *E. cheiranthoides* L. Worm-seed. Common in woods.

CAPPARIDACEÆ.

POLANISIA Raf.

291. *P. trachysperma* Torr. & Gray. Common along shores of lakes, growing in sand. The plant has a strong, offensive odor.

CRASSULACEÆ.

PENTHORUM L.

292. *P. sedoides* L. Common in low ground and marshes.

SAXIFRAGACEÆ.

HEUCHERA L. -

293. *H. hispida* Pursh. Dry prairies; infrequent.

PARNASSIA L. Grass of Parnassus.

294. *P. caroliniana* Michx. A very pretty plant, once common on low prairies, but rapidly disappearing.

GROSSULARIACEÆ.

RIBES L.

295. *R. cynosbati* L. Prickly Gooseberry. Infrequent in woods.
296. *R. gracile* Michx. Smooth-fruited Gooseberry. Very common in woods. The fruit sometimes sold in the market.
297. *R. floridum* L'Her. Wild Black Currant. Very common in woods. The fruit, resembling the black currant of the garden in flavor, is liked by some people.

ROSACEÆ.

SPIRÆA L. Meadow-sweet.

298. *S. salicifolia* L. A pretty little shrub, common in woods, and low prairies.

## RUBUS L.

299. *R. strigosus* Michx. Wild Red Raspberry. Frequent in woods.
300. *R. occidentalis* L. Black Raspberry. Very common in woods, and introduced by birds into artificial groves. The original of the blackcap of the garden.
301. *R. villosus* Ait. Blackberry. Rare, in a ravine west of Estherville.

## FRAGARIA L. Strawberry.

302. *F. virginiana* Duchesne. (*F. virginiana* var. *illinoensis* Prince). Very common on the prairies.
303. *F. vesca* L. Rather rare in woods.

## POTENTILLA L.

304. *P. arguta* Pursh. Frequent on dry prairies.
305. *P. monspeliensis* L. (*P. norvegica* L.) Common, shores of lakes and streams, and in cultivated fields.
306. *P. paradoxa* Nutt. (non *P. supina* L.) Frequent on the shores of lakes.
307. *P. canadensis* L. Very rare; collected but once southeast of Armstrong.

## COMARUM L.

308. *C. palustre* L. (*Potentilla palustris* Scop.) Marsh Five-finger. Rare in bogs in the eastern half of the county.

## GEUM L.

309. *G. canadense* Jacq. (*G. album* Gmelin) White Avens. Frequent in woods.

## AGRIMONIA L.

310. *A. hirsuta* (Muhl.) Bicknell. (non *A. eupatoria* L.) Common in woods.

## ROSA L. Wild Rose.

311. *R. blanda* Ait. Common in woods. Leaflets 3 to 5; prickles few.
312. *R. arkansana* Porter. Very common on prairies. Very prickly; leaflets 5 to 9.

## POMACEÆ.

MALUS Juss. Wild Crab-apple.

313. *M. ioensis* (Wood) Britton. (*Pyrus ioensis* Bailey.)  
Rare in woods.

AMELANCHIER Medic. June Berry.

314. *A. alnifolia* Nutt. Frequent in woods. A western species rarely found in this region.

CRATÆGUS L. Thorn Apple.

315. *C. punctata* Jacq. Rare in woods near Iowa Lake.  
316. *C. coccinea* L. Our most common species.  
317. *C. mollis* (Torr. and Gray.) Scheele. (*C. subvillosa* Schrad.) Frequent in timber. Our thorn apples are much confused and perhaps include several of the recently published species.

## DRUPACEÆ.

PRUNUS L.

318. *P. americana* Marsh. Wild Plum. Very common in open woods.  
319. *P. virginiana* L. Choke Cherry. Very common in open woods.  
320. *P. serotina* Ehrh. Wild Black Cherry. Rare in woods west of Estherville.

## CÆSALPINACEÆ

CASSIA L. Sensitive Pea.

321. *C. chamæcrista* L. Common in dry sandy soil. Sometimes cultivated.

## PAPILIONACEÆ.

BAPTISIA Vent. Wild-Indigo.

322. *B. bracteata* Ell. (*B. leucophæa* Nutt.) Common; prairies and border of woods.

MELILOTUS Juss.

323. *M. alba* Desv. White Sweet-clover. Frequent; adventive from Europe.

324. *M. officinalis* (L.) Lam. Yellow Sweet-clover. Infrequent; streets of Estherville. Adventive from Europe.

## TRIFOLIUM L.

325. *T. pratense* L. Red Clover. Roadsides; escaped from cultivation.
326. *T. hybridum* L. Alsike Clover. Rare; introduced along road northeast of Armstrong, 1885.
327. *T. repens* L. White Clover. A very common escape from cultivation.

## PSORALEA L.

328. *P. argophylla* Pursh. Very common on prairie slopes. Flowering freely, but rarely perfecting seed.
329. *P. esculenta* Pursh. Pomme de Prairie. Frequent on high prairies. The large starchy roots were used as an article of food by the Indians, and by the French voyageurs.

## AMORPHA L.

330. *A. fruticosa* L. False Indigo. A common shrub on prairies and in open woods.
331. *A. nana* Nutt. (*A. microphylla* Pursh.) Frequent on prairies. A pretty little shrub, somewhat resembling box.
332. *A. canescens* Pursh. Lead Plant. Shoestring. A very common little shrub on prairies and borders of woods.

## KUHNISTERA Lam.

333. *K. candida* (Willd.) Kuntze. (*Petalostemon candidus* Michx.) White Prairie Clover. Common.
334. *K. purpurea* (Vent.) Mac M. (*Petalostemon violaceus* Michx.) Purple Prairie Clover. Very common on prairies.

## ROBINIA L.

335. *R. pseudacacia* L. Locust Tree. Rare, escaped from cultivation.

## ASTRAGALUS L.

336. *A. crassicaarpus* Nutt. (*A. caryocarpus* Ker.) Ground Plum. An early flowering species, common on dry prairies.
337. *A. carolinianus* L. (*A. canadensis* L.) Woods and prairies; common.

## GLYCYRRHIZA L.

338. *G. lepidota* Pursh. Wild Licorice. Frequent on dry prairies.

## MEIBOMIA Adans.

339. *M. canadensis* (L.) Kuntze. (*Desmodium canadense* D C.) Tick-trefoil. Open woods and prairies; common.
340. *M. grandiflora* (Walt.) Kuntze. (*Desmodium acuminatum* D C.) Common in woods.

## LESPEDEZA Michx.

341. *L. capitata* Michx. Frequent on prairies.
342. *L. leptostachya* Engelm. Frequent on dry prairies, but rapidly disappearing.

## VICIA L.

343. *V. americana* Muhl. Pea Vine. Woods and prairies; very common.

## LATHYRUS L.

344. *L. venosus* Muhl. Wild Pea. Woods and prairies; common.
345. *L. palustris* L. Rare in low ground; Armstrong.
346. *L. ochroleucus* Hook. Rare; woods west of Estherville.

## FALCATA Gmel.

347. *F. comosa* (L.) Kuntze. Hog Pea-nut. Woods and prairies; common. The flowers above ground often produce fruit, while the pea-nuts by which the plant is usually propagated, are produced by underground, cleistogamous flowers.

## APIOS Moench.

348. *A. apios* (L.) Mac M. A handsome plant, sometimes called False Wisteria, bearing edible tubers. Frequent along river banks, climbing over bushes.

## STROPHOSTYLES Ell.

349. *S. helvola* (L.) Britton. (*S. angulosa* Ell; *Phaseolus diversifolius* Pers.) River banks near Armstrong; rare.
350. *S. pauciflora* (Benth.) S. Watson. (*Phaseolus pauciflorus* Benth.) Sandy shore of Swan Lake; rare.

## OXALIDACEÆ.

## OXALIS L.

351. *O. violacea* L. Violet Wood-sorrel. Woods and prairies; very common.
352. *O. stricta* L. (*O. corniculata* var. *stricta* Sav.) Yellow Wood-sorrel. Very common.

## LINACEÆ.

## LINUM L.

353. *L. sulcatum* Riddell. Wild Flax. Frequent on dry prairies.
354. *L. usitatissimum* L. Flax. Escaped from cultivation to roadsides, where it persists for a year or two.

## RUTACEÆ.

## XANTHOXYLUM L.

355. *X. americanum* Mill. Prickly Ash. A prickly shrub, frequent in woods.

## POLYGALACEÆ.

## POLYGALA L.

356. *P. verticillata* L. Frequent on low prairies.
357. *P. viridescens* L. (*P. sanguinea* L.) Very rare; prairies near Armstrong.

## EUPHORBIACEÆ.

## ACALYPHA L.

358. *A. virginica* L. Common in the woods south of Iowa Lake.



## EUPHORBIA L.

359. *E. glyptosperma* Engelm. Spurge. Very common on dry prairies.

## CALLITRICHACEÆ.

## CALLITRICHE L.

360. *C. palustris* L. (*C. verna* L.) Slough two miles northeast of Armstrong; also 12 mile Lake, (Prof. B. Shimek 1899.)

## ANACARDIACEÆ.

## RHUS. L.

361. *R. hirta* (L.) Sudw. (*R. typhina* L.) Stag-horn Sumac. A beautiful shrub, rare in this region. Bank of west fork of Des Moines two miles southwest of Armstrong, and on south shore of Iowa lake.
362. *R. glabra* L. Smooth Sumac. Very common around timber.
363. *R. radicans* L. Poison Oak; Poison Ivy. Very common in woods, and frequent on gopher knolls on prairies. The climbing form does not occur here.

## CELASTRACEÆ.

## EUONYMUS L.

364. *E. atropurpureus* Jacq. Wahoo; Burning Bush. Rare, in woods along the west fork of the Des Moines.

## CELASTRUS L.

365. *C. scandens* L. Climbing Bittersweet. Common in woods and introduced by birds into artificial groves.

## STAPHYLEACEÆ.

## STAPHYLEA L.

366. *S. trifolia* L. Bladder-nut. A pretty shrub; rare in woods west of Estherville.

## ACERACEÆ.

## ACER L.

367. *A. saccharinum* L. (*A. dasycarpum* Ehrh.) Soft Maple. Frequent on river banks, and very common in cultivation.
368. *A. nigrum* Michx. (*A. saccharinum* var. *nigrum* Torr. and Gray.) Hard or Sugar Maple. Common in woods, preferring dryer ground than the preceding species.

## BALSAMINACEÆ.

## IMPATIENS L.

369. *I. biflora* Walt. (*I. fulva* Nutt.) Spotted Touch-me-not. Springy places in woods.
370. *I. aurea* Muhl. (*I. pallida* Nutt.) Pale Touch-me-not. With the preceding, and more common.

## RHAMNACEÆ.

## CEANOTHUS L.

371. *C. americanus* L. New Jersey Tea. A pretty shrub, frequent on dry prairies.

## VITACEÆ.

## VITIS L. Wild Grape.

372. *V. vulpina* L. (*V. riparia* Michx.) Very common in woods and artificial groves.

## PARTHENOCISSUS Planch.

373. *P. quinquefolia* (L.) Planch. (*Ampelopsis quinquefolia* Michx.) Virginia Creeper. Common in woods, and also in cultivation.

## TILIACEÆ.

## TILIA L. Basswood.

374. *T. americana* L. Common in low woods. The sweet scented flowers much frequented by bees.

## MALVACEÆ.

## MALVA L.

375. *M. sylvestris* L. High Mallow. Streets of Estherville; adventive from Europe.
376. *M. rotundifolia* L. Running Mallow. Streets of Estherville; introduced from Europe.

## HIBISCUS L.

377. *H. trionum* L. Bladder Ketmia. Venice Mallow. Rarely escaped from cultivation; a native of southern Europe.

## HYPERICACEÆ.

## HYPERICUM L.

378. *H. canadense* L. Rare in wet places.

## TRIADENUM Raf.

379. *T. virginicum* (L.) Raf. (*Elodea campanulata* Pursh.) Common in marshes.

## CISTACEÆ.

## HELIANTHEMUM Pers.

380. *H. canadense* (L.) Michx. Frostweed. Very rare on gravelly banks.

## VIOLACEÆ.

## VIOLA L.

381. *V. pedatifida* Don. (*V. delphinifolia* Nutt.) Prairie Violet. Common on dry prairies.
382. *V. obliqua* Hill. (*V. cucullata* Ait.) Meadow Violet. Very common in low ground; variable.
383. *V. pubescens* Ait. Yellow Violet. Common in woods.

## LYTHRACEÆ.

## LYTHRUM L.

384. *L. alatum* Pursh. Very common in low ground.

## ONAGRACEÆ.

## LUDWIGIA L.

385. *L. polycarpa* Short and Peter. Low ground near Armstrong; rare.

## CHAMÆNERION Adans.

386. *C. angustifolium* (L.) Scop. (*Epilobium angustifolium* L. Willow-herb. Very rare; collected but once in low ground one mile northeast of Armstrong.

## EPILOBIUM L.

387. *E. lineare* Muhl. Frequent in low, marshy places.  
 388. *E. coloratum* Muhl. With the preceding, and more common.

## ONAGRA Adans.

389. *O. biennis* (L.) Scop. (*Enothera biennis* L.) Evening Primrose. Common on prairies, and as a weed in cultivated fields.

## MERIOLIX Raf.

390. *M. serrulata* (Nutt.) Walp. (*Enothera serrulata* Nutt.) Frequent on dry knolls.

## CIRCÆA L.

391. *C. lutetiana* L. Frequent in woods.

## HALORAGIDACEÆ.

## MYRIOPHYLLUM L. Water Milfoil.

392. *M. spicatum* L. Common in lakes and ponds.  
 393. *M. heterophyllum* Michx. Ponds and streams; less common than the preceding.

## ARALIACEÆ.

## ARALIA L.

394. *A. racemosa* L. American Spikenard. Frequent in low woods.  
 395. *A. nudicaulis* L. Wild Sarsaparilla. Rare in the woods along the west fork of the Des Moines.

## APIACEÆ.

## HERACLEUM L.

396. *H. lanatum* Michx. Cow Parsnip. Infrequent in woods.

## PASTINACA L. Parsnip.

397. *P. sativa* L. Escaped from gardens; a native of Europe.

## THASPIUM Nutt.

398. *T. trifoliatum aureum* (Nutt.) Britton. (*T. aureum* Nutt.) Meadow Parsnip. Woods west of Estherville.

## ERYNGIUM L.

399. *E. aquaticum* L. (*E. yuccæfolium* Michx.) Rattlesnake Master. Very common on prairies.

## SANICULA L.

400. *S. canadensis* L. Snakeroot. Common in woods.

## PIMPINELLA L.

401. *P. integerrima* (L.) A. Gray. Woods, Iowa lake, infrequent.

## WASHINGTONIA Raf. Sweet-Cicely.

402. *W. claytoni* (Michx.) Britton (*Osmorrhiza brevistylis* D C.) Frequent in rich woods.

## SIUM L.

403. *S. cicutæfolium* Gmel. Common in sloughs, and margins of ponds.

## ZIZIA Koch.

404. *Z. aurea* (L.) Koch. (*Thaspium aureum* var. *apterum* A. Gray.) Meadow-parsnip. Very common on low prairies.

405. *Z. cordata* (Walt.) D C. (*Thaspium trifoliatum* var. *apterum* A. Gray.) Frequent on dry prairies.

## CARUM L. Caraway.

406. *C. carui* L. Adventive from Europe.

## CICUTA L.

407. *C. maculata* L. Water Hemlock. Common in low ground; the tuberous roots are very poisonous.
408. *C. bulbifera* L. Rare in marshes. This plant bears numerous clusters of bulblets in the leaf axils.

## CORNACEÆ.

## CORNUS L.

409. *C. circinata* L'Her. Round-leaved Dogwood. Rare on shaded banks.
410. *C. asperifolia* Michx. Infrequent.
411. *C. stolonifera* Michx. Frequent in low woods and on river banks.
422. *C. candidissima* Marsh. (*C. paniculata* L'Her.) Panicked Dogwood. Our commonest species.
413. *C. alternifolia* L. f. Alternate-leaved Dogwood. Rare; woods southwest of Armstrong.

## PRIMULACEÆ.

## STEIRONEMA Raf. Loosestrife.

414. *S. ciliatum* (L.) Raf. (*Lysimachia ciliata* L.) Woods and prairies; common.
415. *S. lanceolatum* (Walt.) A. Gray. (*Lysimachia lanceolata* Walt.) Rare; in low ground; sometimes growing in water.
416. *S. quadriflorum* (Sims.) Hitch. (*Lysimachia longifolia* Pursh; *Steironema longifolium* A. Gray.) Very common on low prairies.

## NAUMBURGIA Moench.

417. *N. thyrsiflora* (L.) Duby. (*Lysimachia thyrsiflora* L.) Tufted Loosestrife. Common in marshes.

## OLEACEÆ.

## FRAXINUS L.

418. *F. americana* L. White Ash. Very common in low woods, and along streams.

## GENTIANACEÆ.

## GENTIANA L. Gentian.

- 419. *G. detonsa* Rottb. Collected but once in low ground near Armstrong.
- 420. *G. quinquefolia occidentalis* (A. Gray) Hitchcock. Rare in woods near Estherville.
- 421. *G. puberula* Michx. Frequent on rather high prairies.
- 422. *G. andrewsii* Griseb. Low ground; our commonest species.

## MENYANTHACEÆ.

## MENYANTHES L. Buck Bean.

- 423. *M. trifoliata* L. Frequent in bogs.

## APOCYNACEÆ.

## APOCYNUM L. Dogbane.

- 424. *A. androsaemifolium* L. Common in woods; branches widely spreading.
- 425. *A. cannabinum* L. Common in woods and on low prairies.

## ASCLEPIADACEÆ.

## ASCLEPIAS L.

- 426. *A. tuberosa* L. Pleurisy-root. Common on dry prairies.
- 427. *A. incarnata* L. Swamp Milkweed. Common in low ground.
- 428. *A. sullivantii* Engelm. Frequent on low prairies.
- 429. *A. syriaca* L. (*A. cornuti* L.) Common Milkweed or Silkweed. Common near woods.
- 430. *A. speciosa* Torr. Showy Milkweed. Common on prairies, where it takes the place of the preceding species which has much smaller flowers.
- 431. *A. ovalifolia* Decaisne. Dry woods and prairies; frequent.

432. *A. verticillata* L. Open woods and prairies; frequent.

## ACERATES Ell.

433. *A. lanuginosa* (Nutt.) Decaisne. Frequent on high prairies.

## CONVOLVULACEÆ.

## CONVOLVULUS L.

434. *C. sepium* L. (*Calystegia sepium* R. Br.) Wild Morning-Glory. Woods and prairies; very common and troublesome in cultivated fields.

## CUSCUTACEÆ.

## CUSCUTA L. Dodder.

435. *C. arvensis* Beyr. Parasitic on *Artemisia* on a dry knoll east of Armstrong.
436. *C. polygonorum* Engelm. (*C. chlorocarpa* Engelm.) Iowa Lake; common on various tall herbs.
437. *C. cephalanthi* Engelm. (*C. tenuiflora* Engelm.) South of Iowa Lake; the last three species determined by Prof. B. Shimek.
438. *C. paradoxa* Raf. (*C. glomerata* Choisy.) Our commonest species, looking like rope wound round tall herbs.

## POLEMONIACEÆ.

## PHLOX L. Phlox; Wild Sweet William.

439. *P. pilosa* L. Very common; woods and prairies. The flowers occasionally pure white,
440. *P. divaricata* L. Very common in woods.

## HYDROPHYLLACEÆ.

## HYDROPHYLLUM L.

441. *H. virginicum* L. Water-leaf. Common in low woods.

## MACROCALYX Trew.

442. *M. nyctelea* (L) Kuntze. (*Ellisia nyctelea* L.) Common in low woods.



## BORAGINACEÆ.

## LAPPULA. Moench. Stickseed.

443. *L. lappula* (L.) Barst. (*Echinospermum lappula* Lehm.) Common in waste places; naturalized from Europe.
444. *L. virginiana* (L.) Greene. (*Echinospermum virginicum* Lehm; *Cynoglossum morisoni* D C.) Woods and thickets; common.

## LITHOSPERMUM L.

445. *L. canescens* (Michx.) Lehm. Hoary Puccoon. Indian Paint-root. Very common.
446. *L. angustifolium* Michx. Rather rare; in dry ground, river banks and shores of lakes.

## ONOSMODIUM Michx.

447. *O. carolinianum* (Lam.) D C. False Gromwell. Woods and prairies; common.

## VERBENACEÆ.

## VERBENA L. Verbena.

448. *V. urticifolia* L. Common.
449. *V. hastata* L. Common in dry ground.
450. *V. stricta* L. Our commonest species on dry prairies.

## LABIATÆ..

## TEUCRIUM L.

451. *T. canadense* L. Wood-sage. Frequent in woods.
452. *T. occidentale* A. Gray. Common on low prairies and in bogs.

## SCUTELLARIA L. Skull-cap.

453. *S. lateriflora* L. Common along streams.
454. *S. parvula* Michx. Frequent on low prairies.
455. *S. galericulata* L. Very common in marshes, especially around old muskrat houses.

## AGASTACHE Clayt. Giant Hyssop.

456. *A. scrophulariæfolia* (Willd.) Kuntze. (*Lophanthus scrophulariæfolius* Benth.) Frequent in woods.

457. *A. anethiodora* (Nutt.) Britton. (*Lophanthus anisatus* Benth.) Rare in woods along West Fork of Des Moines.

**NEPETA L.** Catnip.

458. *N. cataria* L. Introduced from Europe into waste places.

**PHYSOSTEGIA Benth.**

459. *P. virginiana* (L.) Benth. Common along streams.

**LEONURUS L.**

460. *L. cardiaca* L. Motherwort. Frequent as a weed in waste places; introduced from Europe.

**STACHYS L.**

461. *S. palustris* L. Common in swamps and on low prairies.

**MONARDA L.**

462. *M. fistulosa* L. Wild Bergamot. Very common; woods and dry prairies.

**KÆLLIA Moench.**

463. *K. virginiana* (L.) MacM. (*Pycnanthemum lanceolatum* Pursh.) Everywhere common; woods and low prairies.

**LYCOPUS L.**

464. *L. virginicus* L. Common in marshes. Aerial stolons from tips of fruiting branches observed in this species.

465. *L. americanus* Muhl. (*L. europæus* var. *sinuatus* A. Gray.) Common in low ground.

**MENTHA L.**

466. *M. canadensis* L. Wild Mint. Frequent in low ground.

**SOLANACEÆ.**

**PHYSALIS L.** Ground Cherry.

467. *P. lanceolata* Michx. Common on prairies and in cultivated ground.

468. *P. virginiana* Mill. Similar situations to the preceding, and more common.

## SOLANUM L.

469. *S. nigrum* L. Black Nightshade. Very common; the fruit sometimes used for pies.  
 470. *S. rostratum* Dunal. Rare; three miles south of Armstrong; introduced from the southwest.

## DATURA L.

471. *D. stramonium* L. Jimson weed. Infrequent, waste places; introduced from the tropics.

## SCROPHULARIACEÆ.

## VERBASCUM L.

472. *V. thapsus* L. Great Mullen. State line, Iowa Lake, rare; naturalized from Europe.

## SCROPHULARIA L. Figwort.

473. *S. marylandica* L. Woods and prairies; common.  
 474. *S. leporella* Bicknell. Woods west of Estherville. (Prof. T. J. Fitzpatrick.)

## MIMULUS L.

475. *M. ringens* L. Monkey-flower. Frequent along river banks and in low woods.

## GRATIOLA L.

476. *G. virginiana* L. Common on low prairies.

## ILYANTHES Raf.

477. *I. gratioloides* (L.) Benth. Low ground near railroad bridge south of Estherville; rare.

## VERONICA L.

478. *V. anagallis-aquatica* L. Water Speedwell. Frequent along streams.

## LEPTANDRA Nutt.

479. *L. virginica* (L.) Nutt. (*Veronica virginica* L.) Culver's-root. Common; woods and prairies.

## GERARDIA L. Gerardia.

480. *G. aspera* Dougl. Frequent on dry prairies.  
 481. *G. purpurea* L. Rare on low prairies near Armstrong.  
 482. *G. tenuifolia* Vahl. Common in low ground.  
 483. *G. auriculata* Michx. Infrequent on prairies.

## CASTILLEJA Mutis.

484. *C. sessiliflora* Pursh. Painted-cup. Dry hillsides; becoming scarce.

## PEDICULARIS L. Lousewort.

485. *P. lanceolata* Michx. Low prairies; less common than the following:  
 486. *P. canadensis* L. Low woods and prairies; very common.

## PINGUICULACEÆ.

## UTRIULARIA L. Bladderwort.

487. *U. vulgaris* L. Common in swamps.  
 488. *U. intermedia* Hayne. Rare in a marsh one mile east of Armstrong; a most beautiful little plant.  
 489. *U. minor* L. Very rare in a marsh one and a half miles northeast of Armstrong.

## OROBANCHACEÆ.

## THALESIA Raf.

490. *T. uniflora* (L.) Britton. (*Aphyllon uniflorum* Torr. & Gray.) North shore of "Weller Lake," Armstrong Grove township; very rare.

## PHRYMACEÆ.

## PHRYMA L.

491. *P. leptostachya* L. Lopseed. Common in woods, and introduced into artificial groves.

## PLANTAGINACEÆ.

## PLANTAGO L. Plantain.

492. *P. major* L. Dooryards and waste places. Probably introduced from Europe.  
 493. *P. rugelii* Decaisne. Growing with the last. Indigenous to America, but undoubtedly introduced here. This plant or the preceding was known to the Indians as White Man's Foot.

494. *P. purshii* R. and S. (*P. patagonica* var. *gnaphalioides* A. Gray.) Rare in dry soil east of Estherville.

## RUBIACEÆ.

## GALIUM L.

495. *G. boreale* L. Northern Bedstraw. Common near timber.  
 496. *G. triflorum* L. Frequent in woods.  
 497. *G. tinctorium* L. (*G. trifidum* Auc.) Low prairies; very common.  
 498. *G. trifidum* L. (*G. trifidum* var. *pusillum* A. Gray.) Rare in marshes.  
 499. *G. concinnum* Torr. and Gray. Shining Bedstraw. common in woods.

## VIBURNACEÆ.

## SAMBUCUS L.

500. *S. canadensis* L. Black Elderberry. Frequent near timber, and along streams. Sometimes cultivated.

## VIBURNUM L.

501. *V. pubescens* (Ait.) Pursh. Downy-leaved Arrowwood. Rare in dry woods along west fork of the Des Moines.  
 502. *V. lentago* L. Black Haw. Common in open woods and along streams. The black edible fruit ripe in September.

## TRIOSTEUM L.

503. *T. perfoliatum* L. Rare; in low woods.

## SYMPHORICARPOS JUSS.

504. *S. occidentalis* Hook. Wolf-berry. Very common; margins of woods, along streams and gopher mounds on open prairies.

## LONICERA L.

505. *L. dioica* L. (*L. glauca* Hill.) Bush Honeysuckle. Frequent in woods.

## CUCURBITACEÆ.

**MICRAMPELIS** Raf. Wild Balsam-apple.

506. *M. lobata* (Michx.) Greene. (*Echinocystis lobata* Torr & Gray.) Common in woods and along streams, climbing over low bushes.

## CAMPANULACEÆ.

**CAMPANULA** L.

507. *C. aparinoides* Pursh. Marsh Bellflower. Frequent in marshes.
508. *C. americana* L. Tall Bellflower. Frequent in low woods.

**LOBELIA** L.

509. *L. syphilitica* L. Great Lobelia. Common on low prairies.
510. *L. spicata hirtella* A. Gray. Very common on low prairies.

## CICHORIACEÆ.

**TARAXACUM** Hall.

511. *T. taraxacum* (L.) Karst. (*T. dens-leonis* Desf.; *T. officinale* Weber.) Common, but probably introduced.

**SONCHUS** L.

512. *S. asper* (L.) All. Streets of Armstrong; adventive from Europe.

**LACTUCA** L.

513. *L. scariola* L. A native of Europe, and but lately introduced into our country.
514. *L. ludoviciana* (Nutt.) D C. Common on low prairies. The pinkish flowers rarely opening.
515. *L. pulchella* (Pursh) D C. A recent introduction from the Northwest.

**LYGODESMIA** D. Don.

516. *L. juncea* (Pursh.) Don. Frequent on dry knolls.

**NOTHOCALAIS** Greene.

517. *N. cuspidata* (Pursh) Greene. (*Troximon cuspidatum* Pursh.) Frequent on hillsides, especially near streams.

## HIERACIUM L. Hawk-weed.

518. *H. canadense* Michx. Woods west of Estherville; infrequent.

## NABALUS Cass.

519. *N. albus* (L.) Hook. (*Prenanthes alba* L.) Rare; woods along west fork of Des Moines.  
 520. *N. asper* (Michx.) Torr. and Gray. (*Prenanthes aspera* Michx.) Frequent on prairies.  
 521. *N. racemosus* (Michx.) D C. *Prenanthes racemosa* Michx. Frequent on prairies.

## AMBROSIACEÆ.

## IVA L.

522. *I. xanthiifolia* (Fresen.) Nutt. A troublesome weed in rich ground; introduced from the Northwest about 1870.

## AMBROSIA L.

523. *A. trifida* L. Great Ragweed. Very common; woods and waste places.  
 524. *A. artemisiæfolia* L. Common Ragweed. A very common and troublesome weed.

## XANTHIUM L.

525. *X. canadense* Mill. Cockle-bur. Common along streams and introduced into cultivated fields.

## CARDUACEÆ.

## VERNONIA Schreb.

526. *V. fasciculata* Michx. Iron-weed. Common in low ground.

## EUPATORIUM L.

527. *E. purpureum* L. Trumpet-weed. Frequent in woods along west fork of Des Moines.  
 528. *E. ageratoides* L. f. White Snakeroot. Very common in woods.  
 529. *E. perfoliatum* L. Boneset. Common; low places, woods and prairies.

## KUHNIA L.

530. *K. eupatorioides* L. Dry knolls and river banks; -common.

**LACINARIA** Hill. Blazing Star. Button Snakeroot.

531. *L. punctata* (Hook.) Kuntze. (*Liatris punctata* Hook.) Frequent on dry gravelly knolls.
532. *L. pycnostachya* (Michx.) Kuntze. (*Liatris pycnostachya* Michx.) Very common on low prairies; rarely pure white flowers are seen.
533. *L. scariosa* (L.) Hill. (*Liatris scariosa* Willd.) Common. The heads are usually sessile, but in wet years they are frequently on peduncles an inch or more in length, a form called var. *racemulosa* Sheldon.

**SOLIDAGO** L. Golden-rod.

534. *S. flexicaulis* L. (*S. latifolia* L.) Frequent in woods.
535. *S. rigidiuscula* (Torr. and Gray.) Porter. (*S. speciosa* var. *angustata* A. Gray.) Rare on dry prairies, growing in clumps.
536. *S. serotina* Ait. Frequent, especially near timber; our tallest species.
537. *S. missouriensis* Nutt. Very common on prairies; our earliest species in flower.
538. *S. canadensis* L. Very common and variable.
539. *S. nemoralis* Ait. Common on dry prairies and gravelly knolls.
540. *S. rigida* L. Very common.
541. *S. riddellii* Frank. Rare on low prairies. The peculiar, grass-like leaves at once distinguish this beautiful species.

**EUTHAMIA** Nutt.

542. *E. graminifolia* (L.) Nutt. (*Solidago lanceolata* L.) Frequent in low prairies.

**BOLTONIA** L'Her.

543. *B. asteroides* (L.) L'Her. Very common on low prairies, often growing in water.

**ASTER** L. Aster.

544. *A. cordifolius* L. Frequent in woods.



545. *A. novæ-angliæ* L. Very common; our largest flowered species.
546. *A. lævis* L. very common; leaves very smooth, and often glaucous.
547. *A. sericeus* Vent. Common on dry prairies. A very distinct and most beautiful species, with silvery leaves and wiry stems.
548. *A. ptarmicoides* (Nees.) Torr and Gray. Flowers white. Rare; six miles west of Estherville on road to Spirit Lake.
549. *A. paniculatus* Lam. Common on low prairies, the leaves resembling those of the Black Willow.
550. *A. lateriflorus* (L.) Britton. (*A. diffusus* Ait; *A. miser* Nutt.) Common in open woods.
551. *A. multiflorus* Ait. Woods and prairies; very common. The flowers, which are very numerous, are white or tinged with purple.

**ERIGERON L.**

552. *E. philadelphicus* L. Fleabane. Common in low ground.
553. *E. ramosus* (Walt.) B. S. P. (*E. strigosus* Muhl.) Frequent on rather dry prairies.

**LEPTILON Raf.**

554. *L. canadense* (L.) Britton. (*Erigeron canadensis* L.) Horseweed. A very common weed, especially in waste places.
555. *L. divaricatum* (Michx.) Raf. (*Erigeron divaricatum* Michx.) Rare on prairies near Armstrong.

**ANTENNARIA Gærtn. Everlasting.**

556. *A. campestris* Rydberg. Very common on prairies.
557. *A. plantaginifolia* (L.) Richards. Open woods. Both species sometimes called Indians' Tobacco.

**SILPHIUM L.**

558. *S. perfoliatum* L. Indian Cup-plant. Frequent in woods.

559. *S. laciniatum* L. Gum weed; Rosin weed; Compass plant. Common on prairies. The leaves greedily eaten by horses and cattle.

**HELIOPSIS** Pers. Ox-eye.

560. *H. scabra* Dunal. Woods and prairies; very common.

**RUDBECKIA** L.

561. *R. hirta* L. Black Eyed Susan. Common on prairies, and in timothy fields as a weed.

**RATIBIDA** Raf.

562. *R. pinnata* (Vent.) Barnhart. (*Lepachys pinnata* Torr. and Gray.) Very common on dry prairies.

**BRAUNERIA** Neck.

563. *B. pallida* (Nutt.) Britton. (*Echinacea angustifolia* DC.) Common on dry prairies.

**HELIANTHUS** L.

564. *H. annuus* L. Common Sunflower. Rare in waste places; introduced from Europe.

565. *H. maximiliani* Schrad. Common on prairies, and as a weed in cultivated fields.

566. *H. grosse-serratus* Martens. Very common in low ground, and our most troublesome species in cultivated fields. All the species of sunflower growing in fields are indiscriminately called rosin-weeds by the farmers.

567. *H. scaberrimus* Ell. (*H. rigidus* Desf.) Very common on dry prairies.

568. *H. strumosus* L. Rare in woods; Iowa Lake and Armstrong Grove.

569. *H. tuberosus* L. Wild Artichoke. Woods and prairies; infrequent.

**COREOPSIS** L.

570. *C. palmata* Nutt. Tickseed. Common on dry prairies.

**BIDENS** L.

571. *B. laevis* (L.) B. S. P. (*B. chrysanthemoides* Michx.) Large Bur-marigold. Margins of lakes and ponds; frequent.

572. *B. cernua* L. Smaller Bur-Marigold. Very common in marshes or other wet places; the heads nodding in fruit.

573. *B. frondosa* L. Spanish Needles. Common; a troublesome weed in low fields.

HELENIUM L.

574. *H. autumnale* L. Sneezeweed. Common on low prairies.

ACHILLEA L.

575. *A. millefolium* L. Yarrow. Milfoil. A common and troublesome weed, introduced in grass seed, native to North America as well as Europe and Asia.

ANTHEMIS L. Mayweed.

576. *A. cotula* L. (*Maruta cotula* DC.) Frequent around old dwellings.

ARTEMISIA L. Wormwood.

577. *A. caudata* Michx. Frequent on dry knolls.

578. *A. dracunculoides* Pursh. Woods and prairies; frequent.

579. *A. absinthium* L. Introduced into waste places from Europe.

580. *A. biennis* Willd. Very common, especially as a weed in wet fields.

581. *A. gnaphalodes* Nutt. (*A. ludoviciana* Nutt. var. *gnaphalodes* Torr. & Gray.) Woods and prairies; very common.

ERECHTITES Raf.

582. *E. hieracifolia* (L.) Raf. Fire-weed. Rare in cultivated ground; probably introduced into our county.

MESADENIA Raf.

583. *M. tuberosa* (Nutt.) Britton. (*Cacalia tuberosa* Nutt.) Common on prairies.

SENECIO L.

584. *S. aureus* L. Golden Ragwort. Squaw-weed. Frequent on prairies, usually growing in patches.

585. *S. palustris* (L.) Hook. Occasionally appearing in marshes and around lakes.

ARCTIUM L.

586. *A. lappa* L. Burdock. Waste places; introduced from Europe.

CNICUS L.

587. *C. iowensis* Pammel. Our commonest thistle; woods and prairies.
588. *C. iowensis crattyi* Pammel. Woods and prairies; less common than the species. For a description of this and the preceding, see Proc. Iowa Acad. Sciences, VIII, p. 231.
589. *C. canescens* (Nutt.) Pammel. (*C. undulatus* var. *canescens* Gray; *Cirsium canescens* Nutt.) A perennial thistle growing in patches, and becoming more plentiful.
590. *C. lanceolatus* (L.) Willd. (*Carduus lanceolatus* L.) Common Pasture Thistle. Fields and waste places; naturalized from Europe.











